

SEQUENCE LISTING

SEQ ID NO: 1

LENGTH: 1447

TYPE: nucleic acid

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: DNA

## SEQUENCE DESCRIPTION:

	GAATTCCGGG AACGAAATAAT TATTATTAGC AATTATTAGC GATCAATAAT CTTGATCAC	TT	62
10	ATG GCA AGC ACT ATT AAG GAA GCA TTA TCA GTG GTG AGT GAA GAC CAG		110
	TCC TIG TTI GAG TGT GCC TAC GGA TCG COC CAC CTT GCA AAG ACA GAA		158
	ATG ACA GGC TOC TCT TOC AGT GAA TAT GGG CAA ACA TCA AAG ATG AGC		206
	CCG CGC GIT CCC CAG CAG GAC TGG TTA TCA CAG CCC COG GGC AGA GIT		254
	ACC ATT AAG ATG GAG TGT AAC CCA AAC CAG GIT AAT GGG TCA AGG AAT		302
15	TCA CCT GAT GAC TGC AGC GTG GCA AAA GGA GGG AAA ATG GIT AGC AGT		350
	TCA GAC AAT GIT GGG ATG AAC TAT GGA AGC TAC ATG GAA GAG AAG CAT		398
	ATT COG CCT OCA AAT ATG ACA ACC AAT GAA CGA AGA GIT ATT GTG CCA		446
	GCA GAT CCT ACG TTA TGG AGC ACA GAC CAT GTC CGG CAG TGG CTG GAG		494
	TGG GCA GTG AAG GAG TAT GGT CTT CCA GAC GTG GAC ATC TTG TTG TTC		542
20	CAG AAC ATT GAT GGG AAA GAG TTG TGT AAA ATG ACC AAA GAT GAC TTC		590
	CAG AGA CTC ACG CGC AGC TAT AAC GCA GAT ATC CTC CTG TCA CAC CTA		638
	CAC TAC CTC AGA GAG AGA GGA GGC ACT TTT ATT TTT OCA AAT ACA TCA		686
	GIT TAC OCA GAA GCA ACG CAA AGA ATA ACA ACA AGG CCA GAT TTA CCT		734
	TAT GAG CAA CGG AGG AGA TCA GCG TGG ACG AGT CAC AGC CAT CCC ACT		782
25	CAG TCA AAA GCT ACC CAA CCA TCA TCT TCA ACA GTG CCC AAA ACA GAA		830
	GAC CAG CGT CCT CAG TTA GAT OCT TAT CAG ATT CTT GGA CGG ACC AGC		878

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AGC CGT CTT GCA AAT CCA GGG AGT GGG CAG ATA CAG CTA TGG CAG TTC 926  
CTA CTG GAG CTT CTG TCG GAC ACC TCC AAC TCC AAC TGC ATC ACC TGG 974  
GAG GGC ACA AAT GGG GAG TTC AAG ATG ACA GAC CCT GAT GAA GTG GCT 1022  
CGG CGT TGG GGA GAG AGG AAA AGC AAA CCT AAC ATG AAC TAT GAC AAA 1070  
CTC AGC CGT GCA CTT CGC TAC TAC TAT GAC AAA AAT ATT ATG ACT AAA 1118  
GTT CAT GGT AAA CGC TAT GCC TAC AAA TTT GAT TTC CAC GGA ATC GCT 1166  
CAG GGC CTC CAG CCT CAC CCT OCA GAA TCA TCC ATG TAC AAA TAC CCA 1214  
TCA GAC CTC CCC TAC ATG AGT TCC TAC CAT GCA CAC CCC CAG AAG ATG 1262  
AAC TTT GTA GCT CCC CAT CCC CCT GCT TTG CCC GTA ACC TCA TCC AGC 1310  
10 TTT TTT GCT GCC CCT AAT OCA TAC TGG AAT TCA OCA ACT GGA GGC ATC 1358  
TAC CCC AAT ACC AGG CTG OCA GCT GCT CAT ATG CCT TCC CAT CTT GGC 1406  
ACC TAC TAC TAA GTG GGGAAAGAAA GAAAGOGCCA AGAAAA 1447

15 SEQ ID NO: 2

LENGTH: 451

TYPE: amino acid

TOPOLOGY: linear

MOLECULE TYPE: peptide

20 SEQUENCE DESCRIPTION:

Met Ala Ser Thr Ile Lys Glu Ala Leu Ser Val Val Ser Glu Asp Gln 16  
Ser Leu Phe Glu Cys Ala Tyr Gly Ser Pro His Leu Ala Lys Thr Glu 32  
25 Met Thr Ala Ser Ser Ser Glu Tyr Gly Gln Thr Ser Lys Met Ser 48  
Pro Arg Val Pro Gln Gln Asp Trp Leu Ser Gln Pro Pro Ala Arg Val 64

	Thr Ile Lys Met Glu Cys Asn Pro Asn Gln Val Asn Gly Ser Arg Asn	80
	Ser Pro Asp Asp Cys Ser Val Ala Lys Gly Gly Lys Met Val Ser Ser	96
	Ser Asp Asn Val Gly Met Asn Tyr Gly Ser Tyr Met Glu Glu Lys His	112
	Ile Pro Pro Pro Asn Met Thr Thr Asn Glu Arg Arg Val Ile Val Pro	128
	Ala Asp Pro Thr Leu Trp Ser Thr Asp His Val Arg Gln Trp Leu Glu	144
	Trp Ala Val Lys Glu Tyr Gly Leu Pro Asp Val Asp Ile Leu Leu Phe	160
	Gln Asn Ile Asp Gly Lys Glu Leu Cys Lys Met Thr Lys Asp Asp Phe	176
	Gln Arg Leu Thr Pro Ser Tyr Asn Ala Asp Ile Leu Leu Ser His Leu	192
	His Tyr Leu Arg Glu Arg Gly Ala Thr Phe Ile Phe Pro Asn Thr Ser	208
10	Val Tyr Pro Glu Ala Thr Gln Arg Ile Thr Thr Arg Pro Asp Leu Pro	224
	Tyr Glu Gln Ala Arg Arg Ser Ala Trp Thr Ser His Ser His Pro Thr	240
	Gln Ser Lys Ala Thr Gln Pro Ser Ser Ser Thr Val Pro Lys Thr Glu	256
	Asp Gln Arg Pro Gln Leu Asp Pro Tyr Gln Ile Leu Gly Pro Thr Ser	272
	Ser Arg Leu Ala Asn Pro Gly Ser Gly Gln Ile Gln Leu Trp Gln Phe	288
15	Leu Leu Glu Leu Leu Ser Asp Ser Ser Asn Ser Asn Cys Ile Thr Trp	304
	Glu Gly Thr Asn Gly Glu Phe Lys Met Thr Asp Pro Asp Glu Val Ala	320
	Arg Arg Trp Gly Glu Arg Lys Ser Lys Pro Asn Met Asn Tyr Asp Lys	336
	Leu Ser Arg Ala Leu Arg Tyr Tyr Asp Lys Asn Ile Met Thr Lys	352
	Val His Gly Lys Arg Tyr Ala Tyr Lys Phe Asp Phe His Gly Ile Ala	368
20	Gln Ala Leu Gln Pro His Pro Pro Glu Ser Ser Met Tyr Lys Tyr Pro	384
	Ser Asp Leu Pro Tyr Met Ser Ser Tyr His Ala His Pro Gln Lys Met	400
	Asn Phe Val Ala Pro His Pro Pro Ala Leu Pro Val Thr Ser Ser Ser	416
	Phe Phe Ala Ala Pro Asn Pro Tyr Trp Asn Ser Pro Thr Gly Gly Ile	432
	Tyr Pro Asn Thr Arg Leu Pro Ala Ala His Met Pro Ser His Leu Gly	448
25	Thr Tyr Tyr	451

SEQ ID NO: 3

LENGTH: 1528

TYPE: nucleic acid

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: DNA

SEQUENCE DESCRIPTION:

10	GAATTCGGG AACGATAAT TATTATTAGC AATTATTAGC GATCAATAAT CTIGATCACAA TT	62
	ATG GCA AGC ACT ATT AAG GAA GCA TTA TCA GTG GTG AGT GAA GAC CAG	110
	TOC TIG TTT GAG TGT GCG TAC GGA TCG CCC CAC CIT GCA AAG ACA GAA	158
	ATG ACA GCC TOC TCT TOC AGT GAA TAT GGG CAA ACA TCA AAG ATG AGC	206
	CCG CGC GIT CCC CAG CAG GAC TGG TTA TCA CAG CCC CCG GCC AGA GIT	254
15	ACC ATT AAG ATG GAG TGT AAC CCA AAC CAG GIT AAT GGG TCA AGG AAT	302
	TCA CCT GAT GAC TGC AGC GTG GCA AAA GGA GGG AAA ATG GIT AGC AGT	350
	TCA GAC AAT GIT GGG ATG AAC TAT GGA AGC TAC ATG GAA GAG AAG CAT	398
	ATT OCG CCT CCA AAT ATG ACA ACC AAT GAA CGA AGA GIT ATT GTG CCA	446
	GCA GAT CCT ACG TTA TGG AGC ACA GAC CAT GIA CGG CAG TGG CTG GAG	494
20	TGG GCA GIT AAG GAG TAT CGT CTT CCA GAC GTG GAC ATC TTG TTG TIC	542
	CAG AAC ATT GAT GGG AAA GAG TTG TGT AAA ATG ACC AAA GAT GAC TIC	590
	CAG AGA CTC ACG OCG AGC TAT AAC GCA GAT ATC CTC CTG TCA CAC CTA	638
	CAC TAC CTC AGA GAG ACT CCT CTT CCA CAT TTG ACT TCA GAT GAT GIT	686
	GAT AAG GCC TTA CAA AAC TCT CCA CGG TTA ATG CAT GCT AGA AAC ACA	734
25	GGA GGA GCC ACT TTT ATT TTT CCA AAT ACA TCA GIT TAC CCA GAA GCA	782
	ACG CAA AGA ATA ACA ACA AGG OCA GAT TTA CCT TAT GAG CAA CGG AGG	830

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AGA TCA GCG TGG ACG AGT CAC AGC CAT CCC ACT CAG TCA AAA GCT ACC 878  
CAA CCA TCA TCT TCA ACA GTG CCC AAA ACA GAA GAC CAG CGT CCT CAG 926  
TIA GAT CCT TAT CAG ATT CTT GGA CGG ACC AGC AGC CGT CTT GCA AAT 974  
CCA GGG AGT GGG CAG ATA CAG CTA TGG CAG TTC CTA CTG GAG CTT CTG 1022  
TCG GAC AGC TCC AAC TCC AAC TGC ATC ACC TGG GAG GGC ACA AAT GGG 1070  
GAG TTC AAG ATG ACA GAC CCT GAT GAA GTG GCT CGG CGT TGG GGA GAG 1118  
AGG AAA AGC AAA CCT AAC ATG AAC TAT GAC AAA CTC AGC CGT GCA CTT 1166  
CGC TAC TAC TAT GAC AAA AAT ATT ATG ACT AAA GTT CAT GGT AAA CGC 1214  
TAT GCC TAC AAA TTT GAT TTC CAC GGA ATC GCT CAG GCC CTC CAG CCT 1262  
10 CAC CCT CCA GAA TCA TCC ATG TAC AAA TAC CCA TCA GAC CTC CCC TAC 1310  
ATG AGT TCC TAC CAT GCA CAC CCC CAG AAG ATG AAC TTT GAA GCT CCC 1358  
CAT CCC CCT GCT TTG CCC GAA ACC TCA TCC AGC TTT TTT GCT GCC CCT 1406  
AAT CCA TAC TGG AAT TCA CCA ACT GGA GGC ATC TAC CCC AAT ACC AGG 1454  
CTG CCA GCT GCT CAT ATG CCT TCC CAT CTT GGC ACC TAC TAC TAA GIG 1502  
15 GGGAAAGAAA GAAAGCGCCA AGAAAA 1528

SEQ ID NO: 4

LENGTH: 478

20 TYPE: amino acid

TOPOLOGY: linear

MOLECULE TYPE: peptide

SEQUENCE DESCRIPTION:

25

Met Ala Ser Thr Ile Lys Glu Ala Leu Ser Val Val Ser Glu Asp Gln 16

Ser Leu Phe Glu Cys Ala Tyr Gly Ser Pro His Leu Ala Lys Thr Glu 32  
 Met Thr Ala Ser Ser Ser Ser Glu Tyr Gly Gln Thr Ser Lys Met Ser 48  
 Pro Arg Val Pro Gln Gln Asp Trp Leu Ser Gln Pro Pro Ala Arg Val 64  
 Thr Ile Lys Met Glu Cys Asn Pro Asn Gln Val Asn Gly Ser Arg Asn 80  
 5 Ser Pro Asp Asp Cys Ser Val Ala Lys Gly Gly Lys Met Val Ser Ser 96  
 Ser Asp Asn Val Gly Met Asn Tyr Gly Ser Tyr Met Glu Glu Lys His 112  
 Ile Pro Pro Pro Asn Met Thr Thr Asn Glu Arg Arg Val Ile Val Pro 128  
 Ala Asp Pro Thr Leu Trp Ser Thr Asp His Val Arg Gln Trp Leu Glu 144  
 Trp Ala Val Lys Glu Tyr Gly Leu Pro Asp Val Asp Ile Leu Leu Phe 160  
 Gln Asn Ile Asp Gly Lys Glu Leu Cys Lys Met Thr Lys Asp Asp Phe 176  
 Gln Arg Leu Thr Pro Ser Tyr Asn Ala Asp Ile Leu Leu Ser His Leu 192  
 His Tyr Leu Arg Glu Thr Pro Leu Pro His Leu Thr Ser Asp Asp Val 208  
 Asp Lys Ala Leu Gln Asn Ser Pro Arg Leu Met His Ala Arg Asn Thr 224  
 Gly Gly Ala Thr Phe Ile Phe Pro Asn Thr Ser Val Tyr Pro Glu Ala 240  
 10 Thr Gln Arg Ile Thr Arg Pro Asp Leu Pro Tyr Glu Gln Ala Arg 256  
 Arg Ser Ala Trp Thr Ser His Ser His Pro Thr Gln Ser Lys Ala Thr 272  
 Gln Pro Ser Ser Ser Thr Val Pro Lys Thr Glu Asp Gln Arg Pro Gln 288  
 Leu Asp Pro Tyr Gln Ile Leu Gly Pro Thr Ser Ser Arg Leu Ala Asn 304  
 Pro Gly Ser Gly Gln Ile Gln Leu Trp Gln Phe Leu Leu Glu Leu Leu 320  
 15 Ser Asp Ser Ser Asn Ser Asn Cys Ile Thr Trp Glu Gly Thr Asn Gly 336  
 Glu Phe Lys Met Thr Asp Pro Asp Glu Val Ala Arg Arg Trp Gly Glu 352  
 Arg Lys Ser Lys Pro Asn Met Asn Tyr Asp Lys Leu Ser Arg Ala Leu 368  
 Arg Tyr Tyr Tyr Asp Lys Asn Ile Met Thr Lys Val His Pro Pro Glu 384  
 Ser Ser Met Tyr Lys Tyr Pro Ser Asp Leu Pro Tyr Met Ser Ser Tyr 400  
 20 His Gly Lys Arg Tyr Ala Tyr Lys Phe Asp Phe His Gly Ile Ala Gln 416  
 Ala Leu Gln Pro His Ala His Pro Gln Lys Met Asn Phe Val Ala Pro 432

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His Pro Pro Ala Leu Pro Val Thr Ser Ser Ser Phe Phe Ala Ala Pro 448  
Asn Pro Tyr Trp Asn Ser Pro Thr Gly Gly Ile Tyr Pro Asn Thr Arg 464  
Leu Pro Ala Ala His Met Pro Ser His Leu Gly Thr Tyr Tyr 478

SEQ ID NO: 5

LENGTH: 23

TYPE: nucleic acid

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: DNA

SEQUENCE DESCRIPTION:

ATCTTIGATCA CATTATGGCA AGC 23

15 SEQ ID NO: 6

LENGTH: 25

TYPE: nucleic acid

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: DNA

SEQUENCE DESCRIPTION:

CACATTATGG CAAGCACATAT TAAGG 25

25 SEQ ID NO: 7

LENGTH: 25

TYPE: nucleic acid

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STANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: DNA

SEQUENCE DESCRIPTION:

CACCTTGTAG TAGGTGCCAA GATGG 25

5'